Project Introduction

Tech-X proposes to develop a comprehensive Fortran testing and refactoring infrastructure that allows developers and scientists to leverage the benefits of comprehensive Integrated Developer Environment (IDE) tools. An intriguing aspect of the infrastructure is the integration of performance measurement, unit testing, and refactoring tools with the many other features of an IDE, which will allow developers to get immediate feedback about the overall application and reduce their development cycle time. Our goal is to promote modern software engineering methodology to a broad spectrum of Fortran users. The infrastructure will facilitate refactoring newly developed and legacy codes correctly and accurately for single and multi-processor applications. Major benefits to refactoring include creating robust codes that are more easily ported to different hardware and software platforms, promoting extensibility, facilitating better collaboration, and encouraging best software engineering practices. For example, refactoring code to remove common blocks allows porting to multi-core architectures with increased thread safety. By packaging pFUnit (Fortran Unit Test Tool) into the Eclipse, combining with improved versions of Photran IDE and the Parallel Tools Platform plugins, the proposed integration we will be able to quickly contribute to the Fortran developer community, whose feedback we hope to use to guide our product development.

Primary U.S. Work Locations and Key Partners
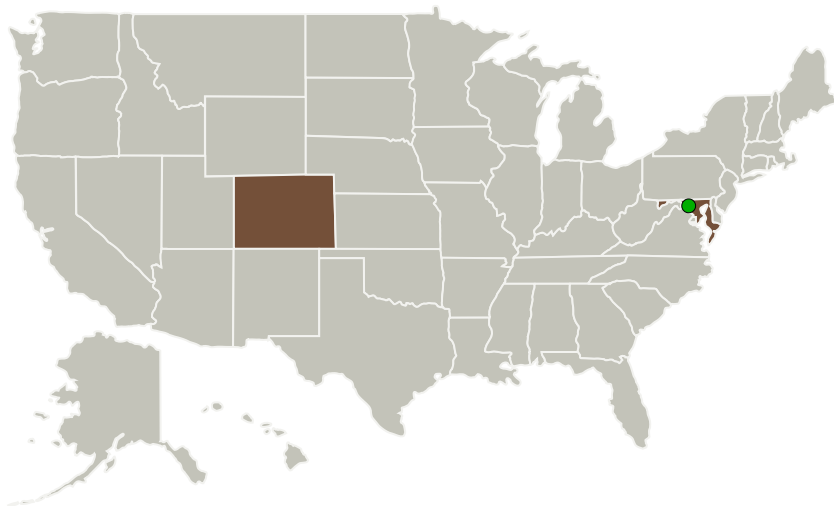

Fortran Testing and Refactoring Infrastructure, Phase II

Table of Contents

Organizations Performing Work	Role	Type	Location
Tech-X Corporation	Lead Organization	Industry	Boulder, Colorado
⬤ Goddard Space Flight Center(GSFC)	Supporting Organization	NASA Center	Greenbelt, Maryland

Primary U.S. Work Locations	
Colorado	Maryland

Project Transitions

▶ **June 2011:** Project Start

✔ **May 2014:** Closed out

Closeout Documentation:
- Final Summary Chart*(https://techport.nasa.gov/file/138877)*

Organizational Responsibility

Responsible Mission Directorate:

Space Technology Mission Directorate (STMD)

Lead Organization:

Tech-X Corporation

Responsible Program:

Small Business Innovation Research/Small Business Tech Transfer

Project Management
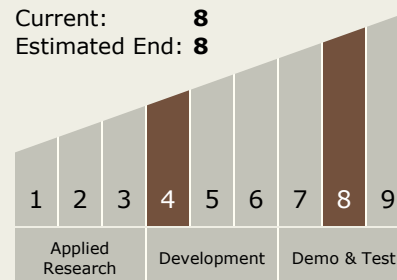
Program Director:

Jason L Kessler

Program Manager:

Carlos Torrez

Principal Investigator:

David M Alexander

Technology Maturity (TRL)

Start: **4**
Current: **8**
Estimated End: **8**

1	2	3	4	5	6	7	8	9
Applied Research			Development			Demo & Test		

Technology Areas

Primary:

- TX11 Software, Modeling, Simulation, and Information Processing
  └ TX11.1 Software Development, Engineering, and Integrity
    └ TX11.1.7 Frameworks, Languages, Tools, and Standards

Target Destinations

The Moon, Mars, Outside the Solar System, The Sun, Earth, Others Inside the Solar System